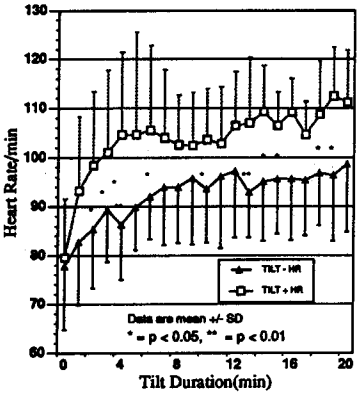
children became significantly higher than TT– children and it remained higher throughout the study period. In contrast, both systolic and diastolic BP were similar.



Conclusion: To maintain their BP during TT, children with autonomic dysfunction (TT+) have a significantly higher HR compared to TT– children. This may be a due to increased cardiac sensitivity to adrenergic stimuli, or as a result of a greater reduction in venous return. These hemodynamic changes may help explain the positive response to therapeutic interventions.

1066-85 A Simplified Time-Saving Head-Up Tilt Testing Protocol With Low Dose Sublingual Isosorbide Dinitrate for the Evaluation of Unexplained Syncope

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The present clinical investigation was undertaken to assess the diagnostic value in unexplained syncope of a simple and time-saving protocol for head-up tilt testing, including low dose sublingual isosorbide dinitrate administration. 73 consecutive patients (43 F, 30 M; mean age 39.6 ± 21.8 yrs) with unexplained syncope despite conventional clinical cardiovascular and neurologic assessment and 10 asymptomatic control subjects underwent head-up tilt testing with isosorbide dinitrate challenge. Participants were tilted at 60 degree for 30 minutes without medication; if no symptoms occurred, 1.25 mg of isosorbide dinitrated were administered sublingually and tilting was continued for further 15 minutes. During the drug free phase 14 patients (19.2%) had syncope. After isosorbide dinitrate administration syncope occurred in further 28 patients (38.3%), while 10 patients (13.7%) developed minor symptoms in association with hypotension. All control subjects had a negative test. The positive rate and specificity of head-up tilt testing were 57.5% and 100% respectively. *Conclusion:* this new practical diagnostic procedure was found to be fairly sensitive and clearly specific in inducing a vasovagal reflex in patients with syncope of uncertain origin. Therefore, such approach could give a significant contribution in diagnostic work up of these patients.

1066-86 A Comparison of Patients with Chronic Fatigue Syndrome with Patients with Syncope Referred for Tilt Table Testing

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It has recently been suggested that patients with the chronic fatigue syndrome (CFS) have a high prevalence of neurally-mediated syncope (NMS) during tilt table testing (TTT). Differences between patients who with CFS and patients who present with syncope (SYN) that have NMS have not been characterized. Accordingly, this study compares the characteristics of these two patient groups and describes their response to TTT. In one year, 207 patients were referred for TTT including 116 patients with CFS and 97 with SYN. The TTT protocol involved 45 min of tilt in the drug-free state; another tilt (15 min) was done with isoproterenol (ISO) if NMS was not elicited during the tilt drug-free state. 102 patients had a positive TTT, 52.6% of the patients with CFS, and 42.3% of the patients with SYN. Of the patients with NMS, CFS patients were younger (39.8 ± 11.6 vs. 50.7 ± 20.0 years, $p < 0.01$), and were more likely to be female (80.3% vs. 58.5%, $p < 0.05$). Of the patients that developed NMS, 62.3% of the patients with CFS and 53.7% of the patients with SYN developed NMS in the drug-free state. The remaining patients with a positive TTT developed NMS during the tilt with ISO. 47.5% of patients with CFS and 43.5% of patients with SYN developed hypotension without bradycardia (vasodepressor); the remaining patients developed hypotension and bradycardia (vasovagal). Despite being younger, patients with CFS that had NMS had resting HRs that were 9 bpm higher than patients with SYN who had NMS (68.8 vs 60.1 bpm, $p < 0.01$). The time to the development of NMS was similar in patients with CFS and SYN (+TTT in the drug-free state: 18.5 vs. 19.3 min, p = ns, and +TTT with ISO: 5.3 vs. 4.5 min, p = ns, respectively). *Conclusion:* In this sample of patients referred for TTT, half of the patients with CFS developed NMS. Compared with patients whose presenting diagnosis was SYN, patients with CFS were younger, more likely to be female, and had higher resting heart rates.

1066-87 Clomipramine Challenge During Tilt Testing in Patients With History of Neurocardiogenic Syncope

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Serotonergic mechanisms have been implicated in the pathogenesis of neurocardiogenic syncope (NCS). In the present study, we evaluated the diagnostic utility of clomipramine (CLPR), a serotonin re-uptake inhibitor, as a new drug challenge during tilt test for the diagnosis of NCS. We studied 10 patients (pts), mean aged 38 ± 14 years, with typical history of neurocardiogenic syncope (group 1) and 8 healthy sex and age-matched controls (group 2). All subjects were sequentially tilted at 60º a) for 30 minutes (min), b) for 10 min with 10 μg isoproterenol (ISO), infusion rate 2 μg/min and c) for 20 min with 5 mg CLPR, infusion rate 1 mg/min. Intervals between tests were 24 hours. The development of syncope/presyncope, associated with significant bradycardia/asystole and concomitant fall in blood pressure, was considered as positive response.

	n	Positive test responses		
		tilt	tilt + ISO	tilt + CLPR
NCS history	10	2	5	9
Controls	8	0	1	2
Test sensitivity	20%	50%	90%	
Test specificity	100%	87%	75%	

Tilt tests with CLPR were positive 6 ± 2 min after the beginning of drug infusion. These preliminary findings implicate that, if we consider typical NCS history the gold standard for NCS diagnosis, clomipramine challenge during tilt test increases significantly the sensitivity of the test and, therefore, might be a valuable tool in the study of pts with syncope of unknown etiology.

1066-88 Baroreflex Gain by Spectral Analysis in Patients After Myocardial Infarction: Comparison with Phenylephrine Method

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Quantification of baroreflex sensitivity (BRS) by the phenylephrine method provides prognostic information in patients after myocardial infarction (MI). Several noninvasive methods based on spectral analysis of spontaneous fluctuations of systolic arterial pressure and heart period have been developed to overcome the limitation of vasoactive drug injection. However the agreement between spectral and pharmacological methods has been evaluated only in normal subjects and hypertensive patients. In 67 patients after MI (age 53 ± 8 yrs, Ejection Fraction 40 ± 13%) we have compared the phenylephrine method (Phe) with the spectral indexes as proposed by Robbe (Robbe) and Pagani (alpha_LF, alpha_HF). All spectral measures could be reliably computed only in 51 patients because of a low coherence (< 0.5). The mean BRS values for the four methods were: 9.1 ± 5.3, 8.5 ± 4.4, 11.8 ± 6.0, 11.6 ± 8.1 ms/mmHg respectively (NS for Robbe vs Phe, $p < 0.05$ for alpha_LF and alpha_HF vs Phe). Regression analysis showed a significant association for all comparisons: $r = 0.63$ for Robbe vs Phe ($p < 0.05$), 0.62 for alpha_LF vs Phe ($p < 0.05$), and 0.59 for alpha_HF vs Phe ($p < 0.05$). The agreement between each couple of measures was assessed according to the Bland-Altman method. The 95% confidence interval (limits of agreement) of the percentage difference between the two measures ranged from −98% to 95% (bias of −1.5%, NS) for Robbe vs Phe, from −67% to 126% (bias 29%, $p < 0.05$) for alpha_LF vs Phe and from −108% to 143% (bias 17%, NS) for alpha_HF vs Phe.

The present study suggests that, despite a substantial linear association, the agreement between vasoactive and spectral techniques in the quantification of baroreflex gain is rather poor as the difference between the two measurements can be as large as the baroreflex gain being estimated. However, spectral indexes can be effectively applied for large screening purposes and ad-hoc studies should be devised to assess their prognostic value.